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ABSTRACT

Links between program quality and the quality of students' experience (or student effort) and the quality of academic leadership were explored through an examination of 10 master's programs in 81 departments at a set of regional universities. Rasmussen's leadership instrument was completed by 90 faculty members, and a modified version of the Pace "Quality of Student Experience" instrument was completed by 270 advanced graduate students. Students assessed their academic experience, participation in selected activities, participation in social events and interpersonal experiences with other students and faculty, and their overall experience in the academic program (e.g., personal development, opinion of the program). Rasmussen's leadership instrument covered several areas concerning administrators' performance: fund acquisition and management of funds, their contribution to the academic and research environment, and administrators' level of skills in interaction with faculty and others. The most interesting finding was that academic performance was slightly more important to program quality than administrative performance. Negative relationships were also considered in detail. (SW)

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RELATIONSHIPS OF LEADERSHIP AND STUDENT EFFORT TO UNIVERSITY PROGRAM QUALITY

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RELATIONSHIPS OF LEADERSHIP AND STUDENT

EFFORT TO UNIVERSITY PROGRAM QUALITY

ABSTRACT

Academic leadership and the quality of student effort, two factors often hypothesized as being related to program quality, were tested in a set of regional universities at the master's level in 81 departments. Rasmussen's leadership instrument was completed by 90 faculty (modified) and the student instrument was completed by 270 students. Of the factored leadership scales, one of the four -- ACADEMIC -- correlated significantly (rho = .67) with quality of the program; of the four factored student scales, one correlated significantly (partial r = - .66) with program quality. Discussion focuses on the negative relationship.

Introduction

The goal of this research was to explore the relationship of program quality with the quality of students' experience or student effort (Pace, 1984) and the quality of academic leadership. With the exceptions of Conrad and Blackburn (1985) and Astin and Solomon (1982), studies on quality assessment of education conducted prior to this investigation have been limited to rating elite universities and have omitted other institutions. Although studies of quantitative correlates of departmental reputational quality have been quite successful in isolating various correlates of quality, most of these correlates relate to faculty background and scholarly productivity, student selectivity, and department size. None of the previous studies has examined a dependent measure of quality in relation to student effort and to leadership.

Objectives

Given the condition of higher education across the nation, the current inquiry is timely. As we approach the end of the century, quality has emerged as perhaps the most salient issue in higher education (Webster, 1983). Research on the quality of higher education has evolved from identifying and ranking the country's top institutions to isolating and measuring the correlates of quality within any given institution. Many factors have provided the impetus for the focus upon institutional quality, including the public's disenchantment with educational institutions, declining enrollments,

and competition for resources. Although this research does not lay claim to providing answers to all these needs, it is an exploratory step in the right direction.

REVIEW OF THE LITERATURE

Young (1985), Conrad and Blackburn (1984), and Young, Blackburn, and Conrad (1986) provide reviews of the literature concerning program quality and higher education. This study included the factors of leadership and student experience or effort which have not been previously included in studies of quality but which have been mentioned as areas of inquiry potentially related to program quality.

Dependent Variable

Program reviews by experts were quantified and used as the measure of the dependent variable. Each review team consisted of three experts with national reputations in the discipline under review. The same team was employed by that state's university system to visit and evaluate all programs within the state's public universities in the discipline under review. Each team conducted site visits, corroborated the departmental self-studies, collected additional data, and interviewed students, faculty, and administrators. The reviewing team prepared a report which discussed the strengths and weaknesses of each department and provided an overall consensus of the quality of the department and submitted the report to the state universities' governing board. For purposes of this study, the reports were reviewed and quantified into programmatic quality "scores" by a separate panel of three reviewers for use as the dependent variable.

Independent Variables

Quality of Student Experience. The Pace "Quality of Student Experience" instrument was used. This questionnaire includes sixteen scales measuring aspects of students' experience which Pace (1984) has found to be important to the overall quality of students' education. Pace equates his scales with quality, and alternately refers to his questionnaire as the Quality of Student Experience or Effort. Previous to this study, this questionnaire had been used with undergraduates but not in relation to program quality.

Data on student experience were first gathered through Pace's questionnaire in 1979. Pace assumed that what students get out of college depends to some extent on what they put into college. He considered quality of experience and quality of effort as different ways of describing a very similar concept. Pace analyzed student experiences and developed a simple, straightforward measure of quality of effort. For each of a number of areas, he selected various tasks or activities in which students might engage, activities ranging from those relatively easy and undemanding to those requiring greater effort and with the greater potential for enhancing learning development. In short, the activities themselves would reflect different levels of quality of effort; in turn, such activities form a scale or measure along a dimension from low to high quality of effort.

Leadership. Early in the sixties, Millet (1962) analyzed universities as bureaucracies, communities, and colloquiums. Prior studies of the organization and administration of higher education had been mostly anecdotal, biographical, or survey normative (e.g., Knight & Holen, 1985). Organizational theories that existed in other domains were often applied to

academic institutions (Stroup, 1966; Parsons & Platt, 1973; Blau & Margulie, 1974-5; Cohen & March, 1974).

In the early seventies, the literature turned away from an effort to characterize leadership in relation to the organizational milieu as researchers began to develop systems for evaluating job performance. Lahti (1973) contended that, unless systematic appraisal started at the top, attempts to implement an evaluation system at other levels were likely to be interpreted as hypocritical. Dressel (1972) maintained that just as faculty members can and should know how students react to their teaching, so ought administrators objectively solicit reactions from those with whom they work. Most evaluation systems of leadership that have been designed to address these types of issues have not been considered very effective. Unstructured or structured narratives, interviews, and documentary files have provided non-comparative evidence, making it impossible to evaluate, for example, a dean's performance according to explicit and predetermined standards (Rasmussen, 1978).

This study assessed neither the overall climate of the institutional organization nor the leadership skills of a given administrator. Instead, it examined
the relationship between the faculty's perception of the quality or performance of departmental leadership and the dependent measure, program quality.

In summary, research was designed to explore the relationship between program quality, as assessed by experts, with the Quality of Student Experience and the Quality of Leadership. It sought to add two new dimensions

to the study of program quality. Unique characteristics of the study are the use of a measure of program quality, the focus upon regional rather than elite universities, and the inclusion of measures of student effort and leadership.

Design and Instrumentation

Quality of Student Experience Questionnaire

Since Pace's questionnaire had not been administered to graduate students prior to this study, it was pretested on a group of fifteen graduate students. These students made suggestions regarding how the questionnaire might be revised in order to omit sections not applicable to graduate students. As a result, background questions pertaining to undergraduates were omitted, as were sections which applied only to undergraduates (student union, residence hall, or fraternity/sorority, and topics of conversations). A total of 153 items were included in the edited version of the questionnaire. For further details on the questionnaire refer to the independent variable section of this paper or Pace (1984).

Independent Variables

Data were collected on the student experience through the dissemination of the questionnaire to advanced graduate students. Pace's Student Experience scales were collapsed into four theoretical scales which had face validity. These scales were formed to represent the students' assessments of their academic experience (ACADEMIC), participation in selected activities (ACTIVE), participation in social events and ratings of interpersonal experiences with

other students and faculty (SOCIAL), and students' ratings of their overall experience in the program (TOTAL EXPERIENCE).

Pace's fourteen scales were combined into four theoretical cluster variables. These variables were formed on the following variable groupings: ACADEMIC (library experience, course learning, writing, science, reading, and experience with faculty); ACTIVITIES (arts, athletics, and organizations); SOCIAL (personal experience, student acquaintances, and conversations); and TOTAL EXPERIENCE (personal development, opinion of the program, relationships, and gains). (See Table 1 for the scale structures).

[Insert Table 1 about here.]

In order to analyze the validity of creating a smaller number of variables related to four combined variables, a rotated factor analysis with Kaiser normalization was produced. The reliabilities of the four scales were: ACADEMIC = .94; ACTIVE = .93; SOCIAL = .84; and TOTAL EXPERIENCE = .52. With the exception of TOTAL EXPERIENCE, which had a low reliability, these reliabilities were excellent. Examination of the contribution of each item in the scale showed that the alpha never exceeded .56 for this scale. Although these items loaded on Factor 4, the factor loadings were only moderate. The scale was retained for the analysis because these scales did not load elsewhere, represented an important aspect of Pace's scales, and formed a factor which supported the theoretical Factor 4, a grouping of items which had face validity. Especially notable is the low reliability score. The lack of relationship found between TOTAL EXPERIENCE and Program Quality in subsequent analyses suggested that retention of this scale in future studies would not prove useful. Overall, however, the other scales were determined to be of

use. The creation of the four scales allowed for analyses which would have been somewhat confounded by the use of more variables than the number of cases.

[Insert Table 2 about here.]

Quality of Leadership Questionnaire

The leadership questionnaire was adapted from one used in research by Rasmussen (1978) on deans' job performance. The questionnaire in Rasmussen's study identified behaviors or abilities determined to be desirable in the dean. Analyses centered around evaluating the faculty's perception, the students' perception, and the Dean's self-perception of the Dean's job performance.

In this study, 26 of the areas of ability were chosen for the Quality of Leadership questionnaire. The faculty members were asked to rate (1 = least, 5 = most), first, the importance of the item, and second, the program's department chair on performance of item. In order to lend a greater sense of their conception of the relative importance of the items, respondents were asked to list the five most important and five least important items. Finally, they were asked to rate the leadership of the program, the university, and the statewide coordinating body. Open-ended questions also were included to allow further comments.

The 26 items in the Leadership scale were combined into four theoretical scales. These scales were formed to represent an overall index of performance on administrative related duties such as fund acquisition and management of funds (ADMINISTRATIVE); a measure of the overall academic tenor and creation of an atmosphere conducive to research (ACADEMIC); a scale representing the level of skills in interaction with faculty and others (INTERPERSONAL).

Factor analysis was performed on the items for the eight programs in the sample. Table 2 represents the factors retained. An analysis of the reliability of the scales showed that the items in each scale contributed to the measurement of a similar phenomena. The alphas went from respectable (.77) for INTERPERSONAL to excellent for ACADEMIC (.90) and ADMINISTRATION (.95). Because the PERSONAL QUALITIES scale contained only two items, a reliability score can not be generated.

Selection of Samples

A subsample of the 81 programs was selected for the exploratory research on the relationship of the quality of student experience and leadership with the dependent variable. Of the twenty programs in the state which had been included in the subsample, thirteen agreed to participate in the study of the relationship of quality, the dependent variable, and student experience and leadership. Once the programs agreed to participate, questionnaires were distributed to their entire faculty and advanced graduate student populations. The size of the final sample from each program was determined by self-selection of student and faculty participants. Of the thirteen programs, complete data were received from ten programs for the student questionnaire (272 respondents) and eight programs for the leadership questionnaire (90 respondents).

RESULTS

Pearson correlations among the students experience scales (for the 272 respondents of the ten programs) show that, although the scales are measuring

different aspects of experience, there are some statistically significant positive correlations between scales. (See Table 3). The results of the factor analysis, the reliabilities for three of the four scales, and the scale intercorrelations suggest that the scales measure distinct and sometimes diverse dimensions of the student experience.

[Insert Table 3 about here.]

A stepwise regression of program (department) quality (DQUAL) on the four student scales is shown in Table 4. ACTIVE did not enter the equation. Caution should be exercised in interpreting the R^2 past Step 2 because the case per step becomes small. (See Table 4).

[Insert Table 4 about here.]

Quality of Leadership and Program Quality

An analysis of variance (ANOVA) by respondents' departments' shows that variance in the importance assigned to items was not statistically significant with an F (9,90) to 1.14. This means departments agree on the importance of each of the items for effective leadership. However, the departments do vary significantly in their performance rating for their supervisor on all items [F (9,90) = 2.39, a = .03 significant at the $P \leq .05$]. This result indicates that departmental leadership performance is assessed as varying in quality from program to program and the respondents do differentiate between importance and performance. These results support the validity of the instrument.

[Insert Table 5 about here.]

In order to understand which items faculty believe are most and least important to high quality leadership and to provide a cross check on the

reliability of the faculties' ratings of the importance of each item to good leadership, the respondents were asked to indicate which variables they believe are the five most important and the five least important to good leadership. The five most often chosen as most important include fairness, allocation and management of funds, administrative management, integrity, and acquisition of funds. The variables most often chosen as least important are scholarly research and protection of academic freedom. Four variables -- encouragement of new ideas, skill in recruiting faculty, delegation of authority, and academic leadership -- tie as the fifth least important variable.

A cross-check of the validity of the reported importance of items was done by ranking items by their average reported importance and comparing the five with the highest and lowest to those variables chosen as most and least important. The five variables rated as most important are executive judgment, integrity, allocation and management of funds, acquisition of funds, and fairness. Those variables rated as least important include scholarly activities, working with groups, encouragement of ideas, providing academic leadership, and improvement of teaching. Four of the five most important variables were selected through both methods (those selected as most important and those which emerged as most important through ratings). This shows there was consistency on what faculty considered as the most and least important items to high quality leadership.

The variables were also ranked according to reported leader performance. Those variables on which leaders' mean scores for performance are highest (with rank of importance in parenthesis) are available and accessibility (19),

integrity (2), personal/professional stability (8), listening (20), and open communication lines (8).

The t-value generated from the Wilcoxon test is 168.5. In order to reject the null hypothesis at the a = .05, for a two tailed test, the t would have to equal 89 or less. It may be concluded from this analysis that there is not a statistically significant concurence between the rankings on the two scales. Therefore, the researchers proceeded with confidence that the use of Performance (P) was measuring Performance and not Importance (I). (See Wilcoxon Analysis in Table 6.)

[Insert Table 6 about here.]

Pearson correlations among the leadership scales shows that although the scales are measuring different aspects of leadership, some statistically significant correlations occur between scales. (See Table 7.) The results of the factor analysis on leadership, the analysis of reliability of the scales, and scale intercorrelation suggests that the scales measure distinct, although not independent, dimensions of the quality of leadership.

[Insert Table 7 about here.]

The relationship between DQUAL and Leadership (for the eight departments with a total of 90 respondents) was analyzed through a stepwise regression of DQUAL on the four Leadership Scales. PERSONAL QUALITIES did not enter into the regression. The findings are summarized in Table 8.

[Insert Table 8 about here.]

Caution should be used in interpreting the R^2 due to the small number of cases in relation to the number of variables, particularly after the second step.

Comparison of Quality Rankings

Since the small number of departments limited the benefit of stepwise regression, other methods of analyses more appropriate to small samples were considered. Spearman rank order coefficients and Pearson correlations were calculated between program quality and each of the Leadership and Student Experience scales. Both statistics are reported because there are advantages to each. The Pearson correlations may be calculated on the data since they are interval, but they tend to underestimate relationships when there is a small number of cases. The Spearman statistic, designed for ordinal data, presents a loss of data when compared to interval-level analysis. Nonetheless, Spearman is better designed to deal with small numbers, especially under 25 cases. Finally, each statistic provides a slightly different approach: Pearson estimates the co-variation of two variables and is calculated from the mean score; Spearman shows how significantly the relative position of mean scores within one group coincide with that of another group. It should be noted that interpretation of the results will be limited by the small sample. Although there were 272 student respondents and 90 faculty respondents, analysis was done at the program level.

First, the Pearson zero order product moment and Spearman rank order correlations were calculated between program quality and each Student Experience Scale. Tables 9 through 13 display the Spearman and Pearson analyses for each of the four Quality of Student Experience Scales:

[Insert Tables 9-13 about here.]

The Spearman and Pearson correlations also served to examine the relationships of each of the four leadership scales -- ADMINISTRATIVE,

ACADEMIC, PERSONAL QUALITIES, AND INTERPERSONAL -- with program quality. The analyses are displayed in Tables 14 through 18.

[Insert Tables 14-18 about here.]

Due to the limited degrees of freedom (9) and multicollinearity, partial correlations were obtained for each scale and the dependent variable while controlling for all other scales. Partial correlation, a statistical method for determining ceteris paribus effects, is less susceptible to multicollinearity than multiple regression. Table 19 displays these results.

[Insert Table 19 about here.]

The partial correlations support previous findings. For the Student Scales, only the Academic scale demonstrates a relationship with program quality. The correlation is $r = .57$ (significant of $p \leq .10$) when controlling for ACTIVITIES, $r = -.66$ (significant at the $p \leq .05$) when controlling for SOCIAL, and $r = -.24$ when controlling for TOTAL EXPERIENCE. These results confirm earlier findings that the more positive are graduate students' perceptions of their academic experience as measured by Pace's Academic Scale, the lower the quality of the program.

The partial correlations between the leadership scales and program quality support earlier findings that the greatest, although moderate, correlation obtains between the Academic scale and program quality ($r = .45$). This result suggests that a moderate, not strong, agreement on the academic aspects of program quality holds between faculty and program review experts.

DISCUSSION

As in all studies, and especially exploratory ones, this one too has its limitations. The generalizability of the results is limited because the investigation was restricted to a single state and to ten departments in each institution. While this study addressed prior research weaknesses observed by others, such as lack of information on learning climate (Pace, 1980) and leadership (Conrad and Blackburn, 1985), it remains exploratory and without outside confirmation. As with most exploratory research, success depends on the willingness of programs -- in this case, deans, faculties, and students -- to participate. The method of obtaining the sample was not random selection. Although many limitations are imposed upon the generalizability of a study based upon such a method, studies attempting to explore such new topics would be impossible without non-random samples.

Conclusions

Correlations simply estimate the magnitude of relationships. Further examination of the scales and dependent variables is necessary to understand, or at least interpret, the meaning of these relationships. Such examination includes first, the clarification of the content and meaning of the quality of student experience and leadership scales; second, the interpretation of the meaning of the program quality measure; and third, the inference of the meaning of the relationships found in the previous analyses.

Quality of Student Experience Results

What is the meaning of the Quality of Student Experience? Pace (1980) coined the term to represent his theory that the more students participate in

the opportunities available at the university and the higher that these students' rate their gains and experiences, the higher will be the quality of their educational experience.

The four scales used in the study were formed by collapsing Pace's scales and slightly modifying these scales through factor analysis. Scales which did not load on the four factors, or which did not pertain to graduate students (e.g., dormitory life) were eliminated. Three of the four resulting scales had high reliability and represented different aspects of the Student Experience.

Two of the scales, SOCIAL and ACTIVITIES, did not have a statistically significant correlation with the dependent measure, program quality, through either the Spearman or Pearson method. This lack of relationship could mean that graduate students learn to gauge activities associated with SOCIAL and ACTIVITIES so that such activities do not interfere with their education. But an increase in these scores (contrary to what Pace found for undergraduates) does not enhance the quality of their experience. One might suspect that this lack of relationship shows that graduate students are less active than undergraduates. However, the study looked at the relative rank of the scores (Spearman) and co-variation in the scores and program quality (Pearson), not the actual score. These results indicate that no relationship holds between the relative rank of these scales and program quality.

The stepwise regression chose ACADEMIC in Step 1. The second and third steps were SOCIAL and TOTAL EXPERIENCE. ACTIVE did not enter the equation. ACADEMIC displayed a statistically significant negative correlation with program quality. These anlayses indicate that the relative ranks of SOCIAL

and ACTIVITY scores do not relate to the rank of program quality scores as indicated by the Spearman's analysis; nor do the variations in SOCIAL and ACTIVITIES scores correspond with variations in program quality. This result suggests that these scales, though including interesting information, do not measure phenomena relevant to graduate program quality.

The relationship of program quality with the ACADEMIC and TOTAL EXPERIENCE scales and the inter-relationship of these two student experience scales are more difficult to interpret. It is hypothesized that program quality would correlate positively and prove statistically significant with ACADEMIC and TOTAL EXPERIENCE; the Spearman and Pearson correlations between ACADEMIC and DQUAL are negative and of moderate strength. The Spearman correlation between TOTAL EXPERIENCE and DQUAL is slight; the Pearson correlation is moderate and positive. When correlated with one another, these two student scales showed a strong negative Pearson correlation.

Several initial interpretations can be entertained. One is that perhaps the more rigorous the program, the more negative the evaluation of the program by the students; they could be judging their preference rather than quality. Yet, most of the items do not allow the student to reflect on whether they like the program. When asked if they would choose their program again, seventy percent said "yes". A negative feeling about the program did not seem to cause the academic scale scores that resulted in this negative correlation.

Another possibility is that the scales do not apply to graduate students and that the comparison of program quality with the scales invalidated their use for graduate students. While this is possible, the questionnaire was pretested with graduate students and scales and items judged irrelevant were

discarded prior to use of the questionnaire in the study. The factor analysis formed four scales which, except for a few subscales, fit the theoretical scales. The subscales which did not fit into four conceptual scales were discarded. Finally, an analysis of the reliability of the scales showed the same high alphas found in Pace's analysis of the sixteen scales, with the exception of the TOTAL EXPERIENCE scale. None of these analyses suggests that the content of the questionnaire is irrelevant, particularly for the ACADEMIC scale. This interpretation of the results does not seem to explain the observed relationship between program quality and Pace's Quality of Student Experience Questionnaire.

A third possible explanation is that lower quality programs tend to have less well-prepared, lower ability students than do high quality programs. Perhaps weaker students perform certain academic activities more often than higher quality students (e.g., LIBRARY EXPERIENCE) because their efforts tend to be less effective and efficient. While we might assume that lower quality programs scored lower on Scholarly Productivity, departmental cluster variable called Scholarly Productivity was a statistically significant correlate of the departmental measure of program quality. Faculties which are less active in publishing would have more time to spend with students (thus, high ratings on EXPERIENCE WITH FACULTY). Finally, these lower quality programs may have faculties less entrenched in research and thereby have more course requirements that are time consuming for faculty (such as papers and essays). All these conditions would result in higher scores on the ACADEMIC scale, but could relate inversely with the departmental cluster variables found related to program quality.

The conclusion drawn from these observations is that perhaps there tends to be a "cross-over" effect between graduate program quality and the Quality of Student Experience scale, ACADEMIC. Cross-over would mean that high scores on academic gains by students are associated with programs which had lower program quality score. The reverse would also hold. This conclusion rests on the premise that quality of the students generally corresponds with the quality of a program. Unlike the Pace study with undergraduates, the conclusion suggests that, for graduate students, high scores on the ACADEMIC scales belie the quality of the student's education or programs.

The conclusions drawn from these analyses are that high scores on SOCIAL and ACTIVE do not equate with program quality. High scores on TOTAL EXPERIENCE, the most qualitative of the scales, relate moderately to program quality, but a more reliable qualitative scale should be developed. Program quality and scores on the ACADEMIC scale have an inverse relationship, suggesting, contrary to Pace, that students with lower expectations, more room for improvement (less well prepared), and who are less effective in accomplishing academic college-related tasks score high on the ACADEMIC scale. In addition, it should be noted that Clark (1973) found negative relationships between student and reputational ratings of <u>some</u> (but not all) doctoral programs, especially in chemistry.

Finally, Pace, who was kind enough to permit us to use his instrument for this inquiry, advances still other explanations for our findings (1986). His instrument was assessing the overall college experience, not a single departmental one. Also, the undergraduate has a breadth of experiences and interests rather than the graduate student's concentration in a single field

with specific subject matter goals and associating for the most part with students of the same mind set. He concludes: "My guess is that we are examining two quite different contexts. What helps to define departmental quality for advanced graduate students probably contributes very little and in some ways may be negative to the definition of quality of college student experiences in the undergraduate total institutional context."

At the same time, Cameron (1977) also found a strong negative correlation (-.69) between within institutional judges of how effective the college was for undergraduate student development and the objective evidence that he was able to collect. As attractive as the notion of quality of student effort being related to the quality of education received is, there is clearly a need for further exploration of what the key ingredients are.

Quality of Leadership Results

The results of the Spearman correlation between program quality and the ACADEMIC scale is statistically significant (rho = .67 significant at the .05). The highest Pearson correlation between program quality and the scales was with ACADEMIC (r = .30). Further, ACADEMIC enters the stepwise regression first (R^2 = .09). The items comprising the scale ACADEMIC are Providing Academic Leadership, Encouragement of Faculty Research, Improvement of Teaching, Protecting Academic Freedom, Communication of Ideas, Sensitive to Faculty, Encouragement of New Ideas, and Scholarly Activities.

The results suggest that the higher the leaders' performance in these areas, the higher the program quality. This finding makes sense, since the dependent measure, program quality, correlates with the departmental cluster variable Scholarly Productivity . The greater efforts the leader makes to

promote scholarly activities, the greater the productivity, thus the higher the correlation with the dependent variable. ACADEMIC has a statistically significant correlation with the cluster variable Scholarly Productivity ($r = .55$, $a = .08$, significant at the $P \leq .10$).

It is to be noted that although high quality performance of leaders in ACADEMIC related to high quality programs, most of these items were given the lowest Importance ratings and were chosen as the least important by faculty. Apparently, either faculty members do not accurately judge the qualities and abilities important to good leadership or the criteria used by experts to rate graduate programs in regional universities are invalid, or leadership is unrelated to quality.

The other scale correlated through the Spearman method (although not statistically significant) with program quality was ADMINISTRATIVE (rho = .48; rho = .57 would be significant at the $p \leq .10$). This scale has the second highest Pearson correlation (although not significant) with program quality ($r = .26$). The scale was chosen in Step 2 of the regression with an $R^2 = .12$ (cumulative $R^2 = .21$). The items in this scale were also chosen as important most often and rated as most important by faculty. The items in the scale included Administrative Management, Executive Judgment, Delegation of Authority and Responsiblity, Acquisition of Funds, Administration and Management of Funds, Leader as Representative of the Program to the Institution, Acting Decisively, Planning, Skill in Recruitment of Faculty, Communication Lines Open, Personnel Administration Skills, Handling Conlfict, and Fairness. These results suggest the items in Administrative scale relate significantly to program quality.

In summary, two leadership scales, PERSONAL QUALITIES and INTERPERSONAL, do not show a relationship with program quality. The ACADEMIC scale is the greatest correlate of program quality, followed by ADMINISTRATIVE. The most interesting finding in the analysis of quality of leadership and its relationship to program quality is that ACADEMIC performance is slightly more important to program quality than ADMINISTRATIVE and this was not recognized by the faculties who rated the Importance of the items to high quality leadership.

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Table 1

Four Student Experience Scales Following Factor Analysis

Factor 1 ACADEMIC	Factor 2 ACTIVITIES	Factor 3 SOCIAL	Factor 4 TOTAL EXPERIENCE
Library Experience (10 items)	Arts (12 items)	Personal Experience (10 items)	Personal Development (5 items)
Course Learning (10 items)	Athletics (11 items)		
Science (12 items)	Organizations (10 items)		Opinion (3 items)
Writing (10 items)			Relationships (3 items)
Gains (30 items)			

Table 2

Quality of Leadership Scales

ADMIN	ACAD	PERSONAL QUAL	INTERPERSONAL
Administrative Management	Academic Leadership	Integrity	Group Skills
Executive Judgment	Faculty Research	Personal/ Professional	Availability/ Accessibility
Delegation of Authority/ Responsibility	Teaching		Listening
Acquisition of Funds	Protecting Academic Freedom		
Admin/Mgt. of Funds	Communication of Ideas		
Acting Decisively	Sensitive to Faculty		
Planning	Encourages New Ideas		
Leader as Representative to Institution	Scholarly Activities		
Skill in Recruitment of Faculty			
Communication Lines Open			
Personnel Admin. Skills			
Handling Conflict			

Table 3

Correlations Among Student Scales

	Academic	Social	Active
Social	.51		
Active	.14	.46	
Total Experience	-.65	-.42	-.25

$r = .43$ significant at the $P \leq .10$ level

Table 4

Stepwise Regression: Student Scales

		R	R^2	R^2 Change
STEP 1	ACADEMIC	-.43	.18	.18
STEP 2	SOCIAL	.24	.47	.29
STEP 3	TOTAL EXPERIENCE	.40	.52	.05

Table 5

ANOVA

By Department

Performance	SS	DF	MEAN SQ
Between Groups	8.48	7	1.21
Within Groups	37.04	73	.51
TOTAL	45.52	80	
F = 2.39	Sig = .0296		ETA SORD = .1862

Importance	SS	DF	MEAN SQ
Between Groups	5.42	7	.7739
Within Groups	50.04	74	.6763
TOTAL	55.46	81	
F = 1.1443	Sig = .3453		ETA SORD = .0977

Table 6

Leadership Variables

Importance and Performance

	Importance (%)	Rank	Performance (%)	Rank	D1	Rank of D1	Negative Rank
Admin. Mgt.	4.14	7	3.80	10	3	(+) 14	
Exec. Judg.	4.34	1	3.71	13	12	(+) 26	
Del. of Auth.	3.95	15	3.71	13	-2	(-) 11	11
Acad./Ldrshp.	3.70	23	3.34	23	0	(+) 2	
Acq. of Funds	4.19	4	3.74	25	21	(+) 30	
All/Mgt.	4.23	3	3.71	13	10	(+) 23.5	
Act. Decis.	4.05	12	3.86	9	-3	(-) 14	14
Plng. Abil.	4.00	13	3.58	19	6	(+) 19	
Inc. for Res.	4.07	10	3.30	10	0	(+) 2	
Impr. Tchg.	3.71	22	2.97	26	4	(+) 16	
Ldr. as Rep.	4.15	5	3.70	16	11	(+) 25	
Skill in Rec.	3.84	17	3.27	24	7	(+) 21.5	
Comm. Lines	4.10	8	4.06	5	-3	(-) 14	
Prot. Acd. Freedom	3.92	16	3.96	6	-10	(-)123.5	23.5
Grps.	3.60	25	3.72	12	-13	(-) 27	27
Pers. Ad.	3.75	20	3.44	21	1	(+) 4.5	
Comm. Ideas	3.84	17	3.62	18	1	(+) 4.5	
Sens. to Par.	4.00	13	3.90	7	-6	(-) 19	19
Band. Conf.	4.07	10	3.67	17	7	(+) 21.5	
Enc. New Ideas	3.63	24	3.38	22	2	(+) 11	
Avail./Access.	3.82	19	4.36	1	-18	(-) 29	29
Listening	3.75	20	4.07	4	-16	(-) 28	28
Integrity	4.26	2	4.30	2	0	(+) 2	
Pers./Prof. Stab.	4.10	8	4.26	3	-5	(-) 17	17
Fairness	4.15	5	3.90	7	2	(+) 11	
Schl. Act.	3.49	24	3.45	20	6	(+) 19	
							140.5

Alpha for Importance = .97

Alpha for Performance = .96

Table 7

Correlations Among Leadership Scales

	ADMIN.	ACADEMIC	PERSONAL QUALITIES
ACADEMIC	.89**		
PERSONAL QUALITIES	.71**	.64*	
INTERPERSONAL	.19	.02	.58

** $p \leq .01$
* $p \leq .05$

Table 8

Stepwise Regression: Program Quality and Leadership

STEP	R	R^2	R^2 Increase
1 ACADEMIC	.30	.09	.09
2 ADMINISTRATIVE	.12	.21	.12
3 INTERPERSONAL	.18	.33	.12

Table 9

Pearson Correlations Between Program Quality and Student Experience Scales

	DQUAL
ACADEMIC	-.43*
SOCIAL	.24
ACTIVITY	.13
TOTAL EXPERIENCE	.40

* $P \leq .10$

Table 10

Spearman'S Rho Between ACADEMIC and DQUAL

Program	Rank of DQUAL	Rank of Scale	Di	Di^2
1	10	3	7	49
2	5.5	5	.5	.25
3	2.5	1	1.5	2.25
4	5.5	4	1.5	2.25
5	1.0	10	9	81
6	2.5	7	4.5	20.25
7	9	6	3	9
8	8	2	6	36
9	4	9	5	25
10	7	8	1	1
				226

Rho = -.37

Table 11

Spearman Rho ACTIVITIES and DQUAL

Program	Rank of DQUAL	Rank of Scale	Di	Di^2
1	10	6	4	16
2	5.5	4	1.5	2.25
3	2.5	2	.5	.25
4	5.5	5	.5	.25
5	1.0	9	8	64
6	2.5	1	1.5	2.25
7	9	7	2	4
8	8	3	5	25
9	4	10	6	36
10	7	8	1	1
				151

Rho = .09

Table 12

Spearman Rho Between SOCIAL and DQUAL

Program	Rank of DQUAL	Rank of Scale	Di	Di^2
1	10	10	0	0
2	5.5	5	.5	.25
3	2.5	7	4.5	20.25
4	5.5	4	1.5	2.25
5	1.0	8	7	49
6	2.5	2	.5	.25
7	9	1	8	64
8	8	3	5	25
9	4	6	2	4
10	7	9	2	4
				169

Rho = .02

Table 13

Spearman Rho TOTAL EXPERIENCE and DQUAL

Program	Rank of DQUAL	Rank of Scale	Di	Di^2
1	10	3	7	49
2	5.5	8	2.5	6.25
3	2.5	4	1.5	2.25
4	5.5	7	1.5	2.25
5	1.0	1	0	0
6	2.5	9	6.5	42.25
7	9	5	4	16
8	8	6	2	4
9	4	2	2	4
10	7	10	3	9
				135

Rho = .18

Table 14

Pearson Correlations Between

Program Quality and Leadership Scales

	Program Quality
ADMINISTRATIVE	.12
ACADEMIC	.30
PERSONAL QUALITIES	.26
INTERPERSONAL SKILLS	.18

$r = .58$ significant at the $P \leq .10$

Table 15

Spearman Rho Between ADMINISTRATION and PROGRAM QUALITY (DQUAL)

Program	Rank of DQUAL	Rank of Scale	Di	Di^2
1	1	5	4	16
2	5	8	3	9
3	2	3	-1	1
4	7	7	0	0
5	3	2	1	1
6	4	1	3	9
7	8	6	2	4
8	6	4	2	4
				44

Rho = .48

Table 16

Spearman Rho Between ACADEMIC and DQUAL

Program	Rank of DQUAL	Rank of Scale	Di	Di^2
1	1	4	3	9
2	5	8	3	9
3	2	2	0	0
4	7	5	2	4
5	3	1	2	4
6	4	3	1	1
7	8	7	1	1
8	6	6	0	0

Rho = .67, P < .10

Table 17

Spearman Rho Between PERSONAL QUALITIES and DQUAL

Program	Rank of DQUAL	Rank of Scale	D1	$D1^2$
1	1	5	4	16
2	5	8	3	9
3	2	1	1	1
4	7	6	1	1
5	3	3	0	0
6	4	4	0	0
7	8	2	6	36
8	6	7	1	1
				64

Rho = .24